Democratizing your organization’s data analytics experience

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Customers want more value from their data

Growing exponentially

From new sources

Increasingly diverse

Used by many people

Analyzed by many applications

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Put data **to work**

Make better decisions

Improve efficiencies

Respond faster

Uncover opportunities

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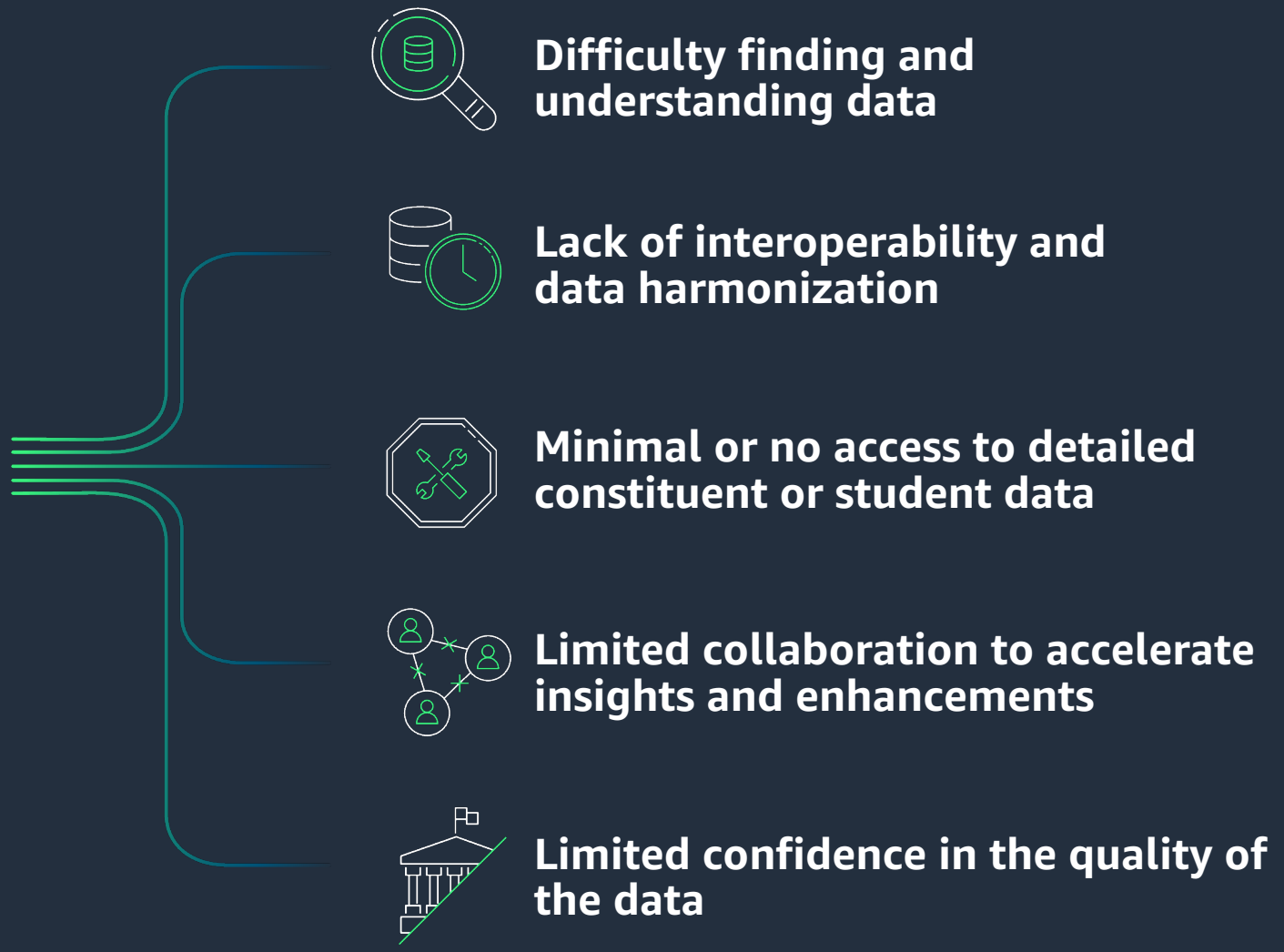
Data issues limiting organizational insights



- Difficulty finding and understanding data
- Lack of interoperability and data harmonization
- Minimal or no access to detailed constituent or student data
- Limited collaboration to accelerate insights and enhancements
- Limited confidence in the quality of the data

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Successful data-driven organizations:

Treat data as an asset

Operationalize their data strategy to align not just processes and technology, but also their people

Provide a federated data governance and compliance model between data producers and data consumers

Collaborate and share data across the enterprise and with third-parties to drive mission and student impact

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Modern data strategy

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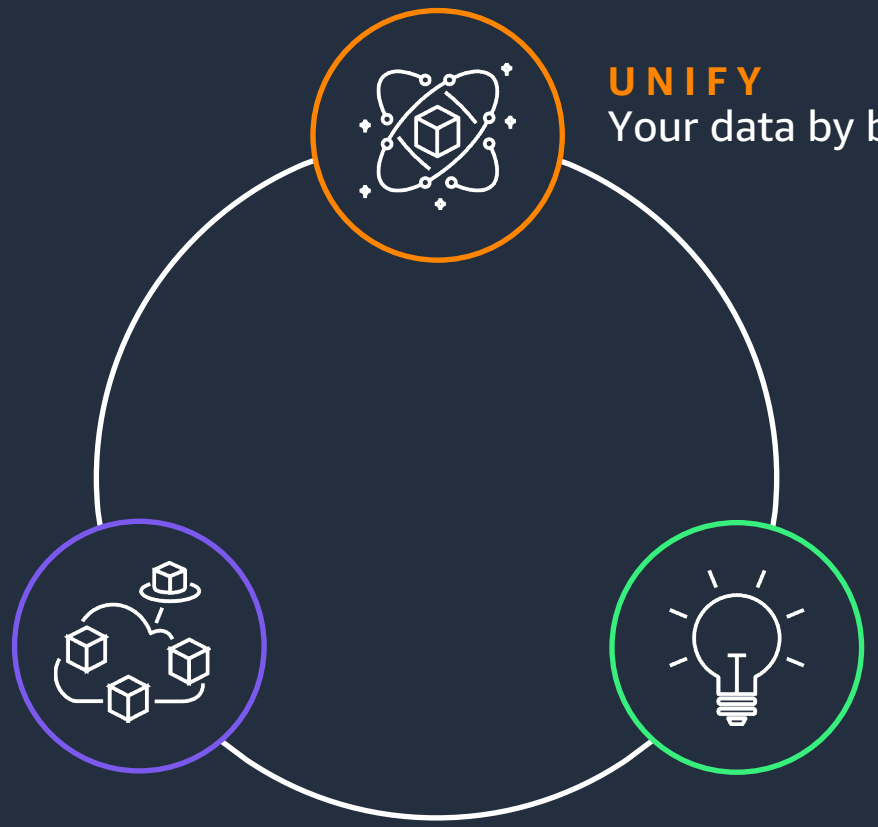
Modern data strategy for better organizational outcomes



UNIFY
Your data by breaking down silos

MODERNIZE
Your data infrastructure to a scalable, trusted, and secure cloud provider

INNOVATE
By inventing new experiences and reimagining existing processes

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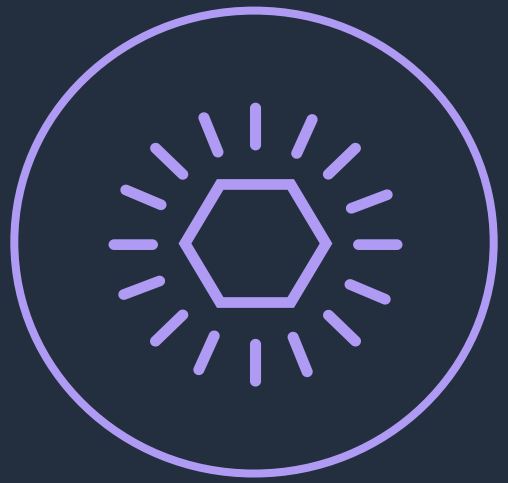
Modernize

MODERNIZE DATA INFRASTRUCTURE FROM A LEGACY SOLUTION TO A SCALABLE, TRUSTED, AND SECURE CLOUD PROVIDER



- Reduce operational overhead with purpose-built, cloud-based databases
- Modernize analytics tools to handle structured, unstructured, and streaming data—at scale
- Standardize on a modern ML infrastructure to harness the ML benefits at scale

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Unify

BREAK DOWN SILOS, SO DATA CAN BE PUT TO WORK ACROSS DATABASES, DATA LAKES, ANALYTICS, AND ML SERVICES

- Unify your data and make data accessible and shared in a secure way
- Confirm that data can easily get to wherever it’s needed, with the right controls
- Enable analysis and insights through analytics, visualization, and ML tools

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Innovate

INVENT NEW EXPERIENCES AND REIMAGINE PROCESSES WITH PURPOSE-BUILT DATABASES, ADVANCED ANALYTICS AND ML

- As the types of data and workloads evolve, the databases, analytics tools, and ML services need to evolve
- ML is driving unprecedented levels of innovation
- Create better customer experiences with insights and predictions enabled by ML

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Building modern data architectures

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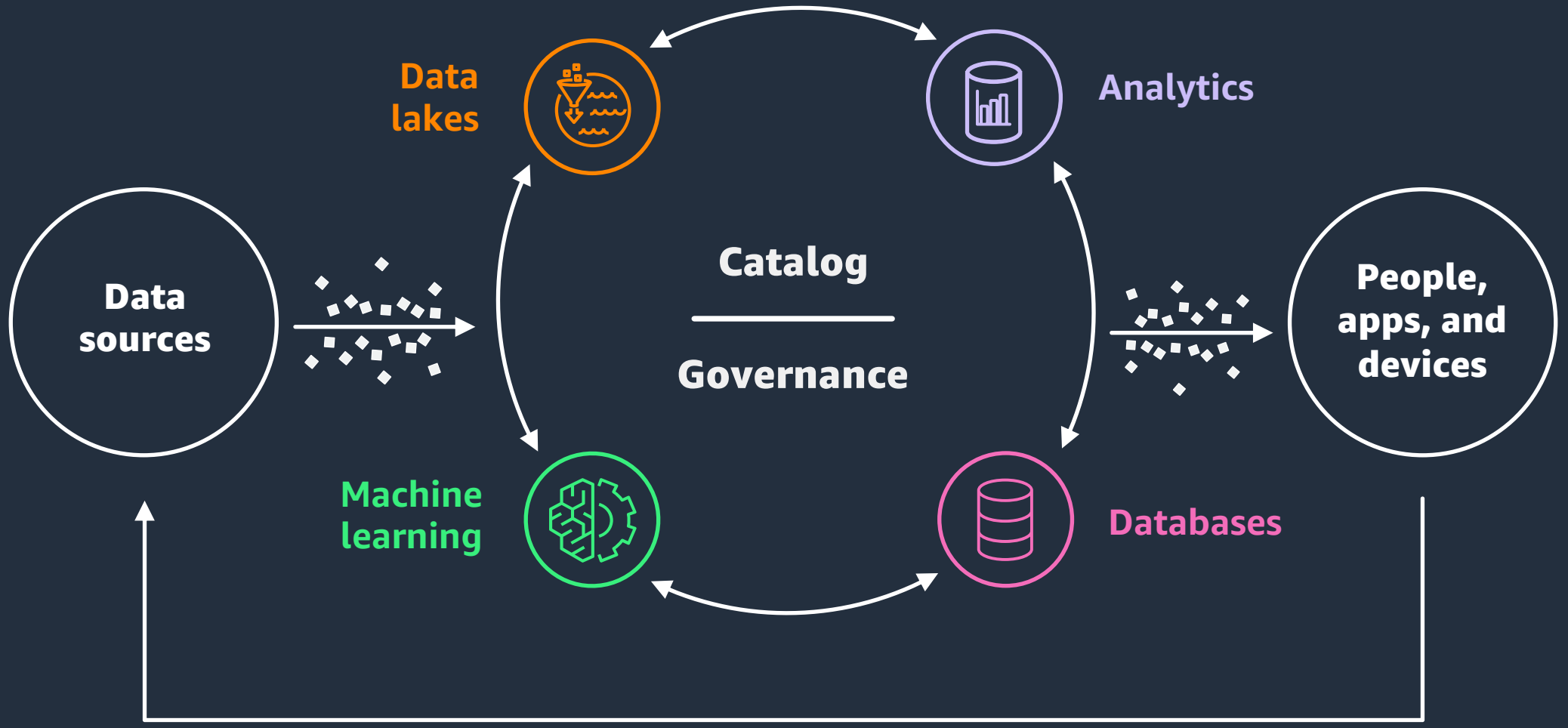
Modern data architecture



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Modern Data Architecture: Pillars

Scalable data lakes

Purpose-built for performance and cost

Serverless and simple to use

Unified data access, security, and governance

Built-in machine learning

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Modern data architecture on Amazon Web Services

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Scalable data lakes

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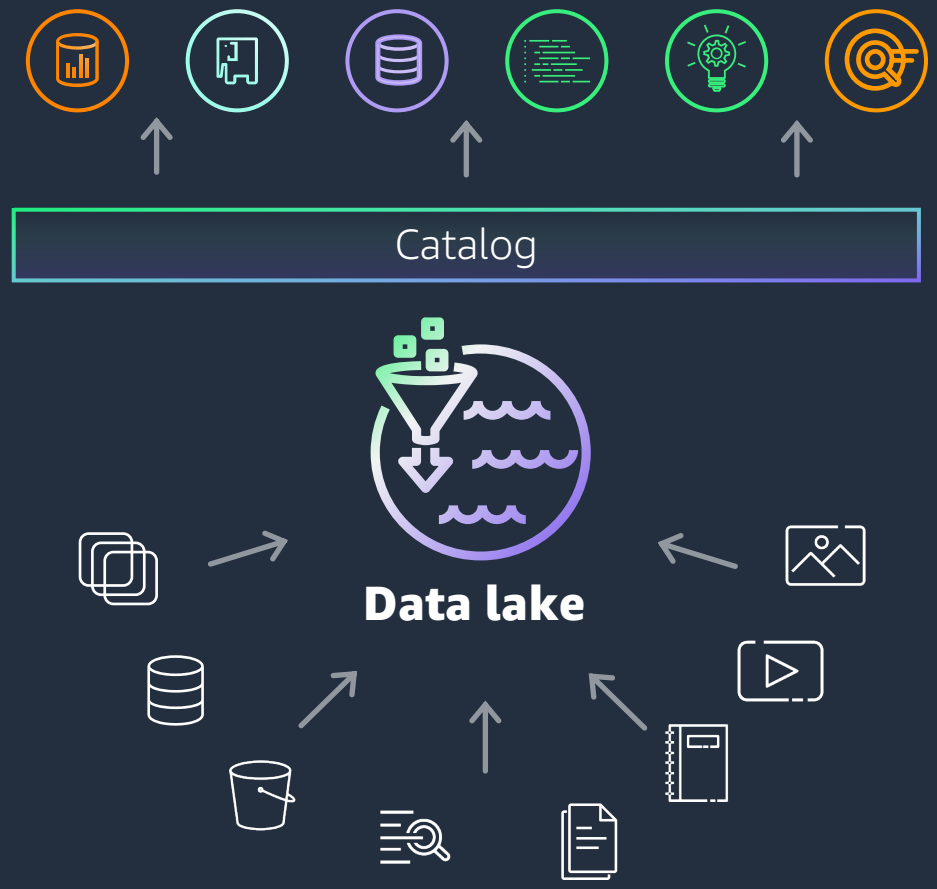
Amazon Simple Storage Service is the best place to build a data lake



- Store all your data in open formats
- Cost-effectively scale storage to exabytes
- Decouple storage from compute
- Choice of analytical and ML engines
- Process data in place

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Purpose-built for performance and cost

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AMAZON REDSHIFT

Data warehousing

AMAZON ATHENA

Query all your data using SQL or Python

AMAZON EMR

Big data processing

AMAZON OPENSEARCH SERVICE

Log and search analytics

AMAZON KINESIS AND MSK

Real-time analytics

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Amazon Redshift

THE BEST PRICE-PERFORMANCE
FOR CLOUD DATA WAREHOUSING

Analyze all your data

Price-performance at any scale

Simple, secure, and reliable

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Amazon Athena

QUERY ALL YOUR DATA
USING SQL OR PYTHON

Simple, instant start

Interactive, advanced analytics

Open and flexible

Cost-effective

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Amazon EMR

RUN BIG DATA APPLICATIONS IN THE CLOUD

Fully managed and customizable

Latest open-source releases

Automatically scale up and down

Best price-performance

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Amazon EMR

RUN BIG DATA APPLICATIONS IN THE CLOUD

Amazon EMR Studio for interactive data analytics

Multiple deployment models

Amazon S3 data lake integration

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Amazon OpenSearch Service

SUCCESSOR TO
AMAZON ELASTICSEARCH SERVICE

Fully managed

Log and search analytics

Cost effective

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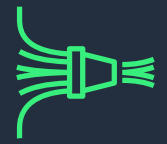
Amazon Kinesis

COLLECT, PROCESS, AND ANALYZE VIDEO AND DATA STREAMS IN REAL TIME

Kinesis Data Streams

Kinesis Data Analytics

Kinesis Video Streams



Kinesis Data Firehose

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Amazon MSK

FULLY MANAGED, HIGHLY AVAILABLE, AND SECURE

Kafka Compatible

Fully managed

Highly available

Secure

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Serverless
and simple to use

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AWS has the most serverless options for data analytics in the cloud

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AWS Glue

SIMPLE, SCALABLE,
AND SERVERLESS

Integrate data faster

Automate at scale

No servers to manage

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AWS Glue: Key capabilities

SERVERLESS DATA INTEGRATION SERVICE

Scalable data integration engine

Built-in data transforms

Execution engine

Monitor

Centralized and unified data governance

Glue data catalog

Glue crawlers

Lake formation

Connect and ingest data

Glue connectors

Glue connector marketplace

Variety of interfaces

User productivity and data ops

Persona specific tools

Productivity tools

Data ops tools

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Unified data access, security, and governance

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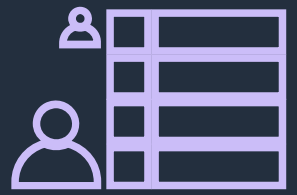
Challenges of building and securing modern data lakes

Support updates and deletes



Row-level
Fine-grained
Secure sharing

Automatic storage optimization

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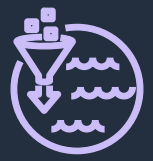
AWS Lake Formation

BUILD A SECURE
DATA LAKE IN DAYS



Build data lakes quickly

Simplify security management

Provide self-service access to data

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AWS Lake Formation

BUILD SECURE DATA LAKES

Portfolio of integrated analytics tools

Amazon Athena

Amazon QuickSight

Amazon Redshift

AWS Glue

Amazon SageMaker

Amazon EMR

Lake Formation

Simplified ingest and cleaning

AWS Glue

Blueprints

ML transform

Reliable and optimized data lakes

ACID transactions

Storage optimization

Catalog

Permissions

Amazon S3

Cost effective, durable data lake storage with global replication capabilities

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ML integration

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AWS brings ML closer to data

Databases

+

Data warehouses
+ data lakes

+

Business
intelligence tools

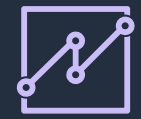
AMAZON
AURORA ML

AMAZON
NEPTUNE ML

AMAZON
REDSHIFT ML

AMAZON
ATHENA ML

AMAZON
QUICKSIGHT ML



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Amazon QuickSight

CLOUD-NATIVE BI SOLUTION
FOR ILLUMINATING
ORGANIZATIONAL INSIGHTS

Auto-scaling and serverless

Internal and/or external users

Deeply integrated with AWS services

Augmented insights on-demand

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AI answers to questions of data on demand

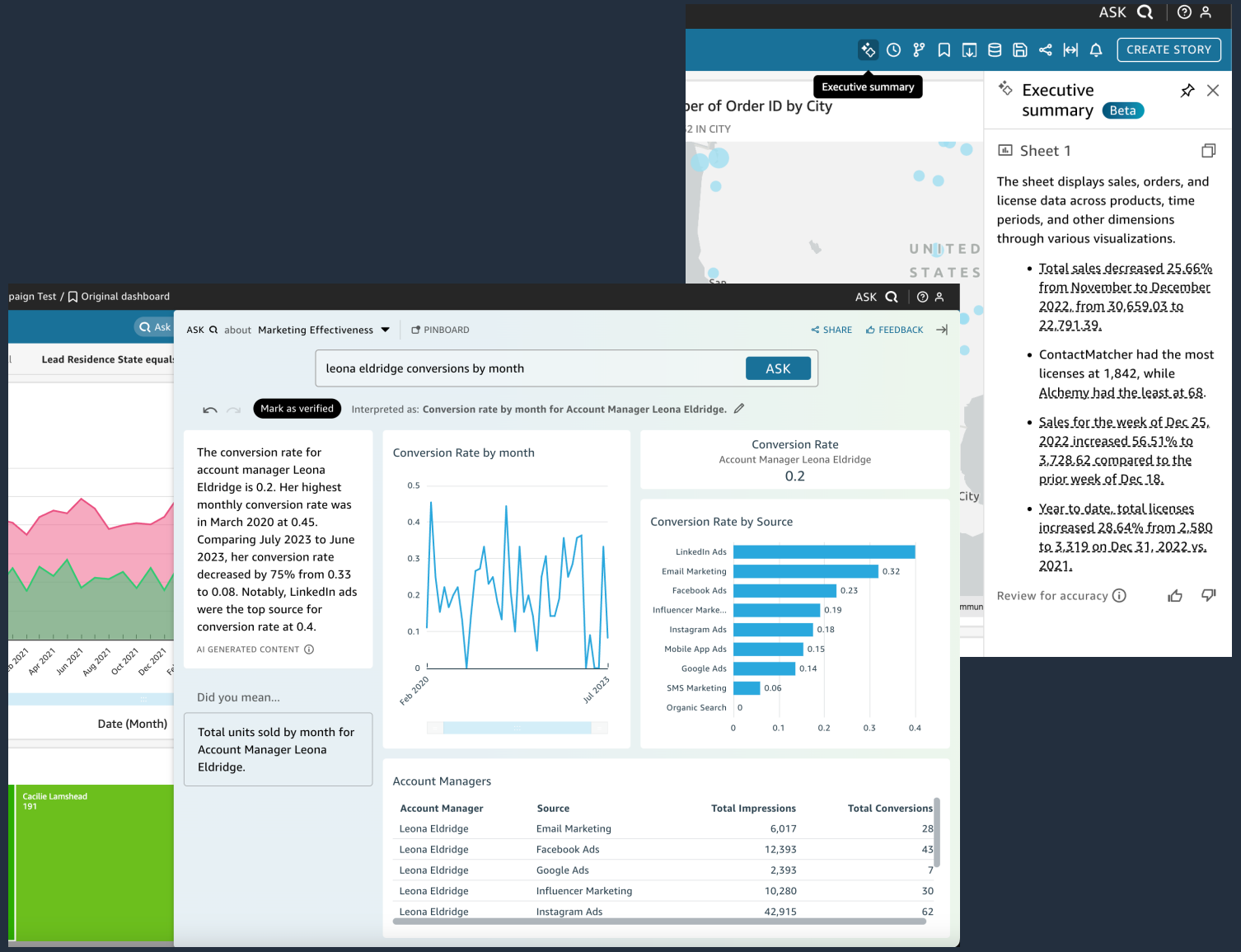
DEEP INSIGHTS AT YOUR FINGERTIPS

Executive summaries of dashboards
Instant summaries of key dashboard insights in natural language explaining top movers, outliers, and more

Easy powerful Q&A for non-experts
Suggested questions and **"what's in my data"** show what can be asked

Multi-visual answers with **narrative insight summaries** explain answer context

Vague question support and **"did-you mean" alternatives** enable iterative fact finding



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AI-assisted storytelling

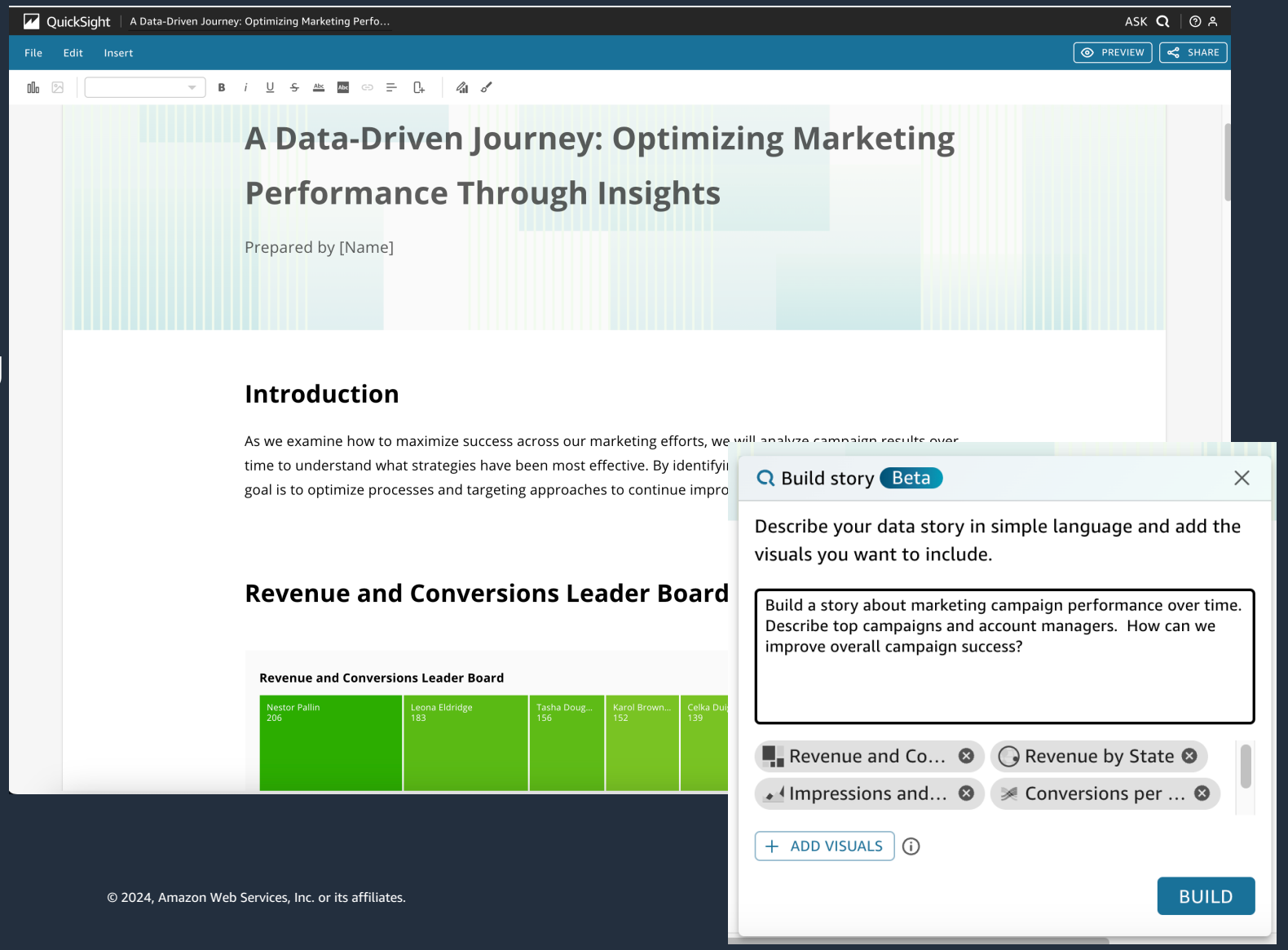
IMPACTFUL DATA STORYTELLING TO DRIVE ACTIONS

Interpret data for others
Help others derive meaning from data and reach conclusions to drive decisions

Generate stories using AI
Generate cohesive, powerful, and insightful narratives by analyzing data with only a few words

Create refined content
Control AI verbosity, customize narrative text, and apply stunning visual themes to bring content to life

Governed and always up to date
Quickly and easily share and update data any time



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Example Architectures

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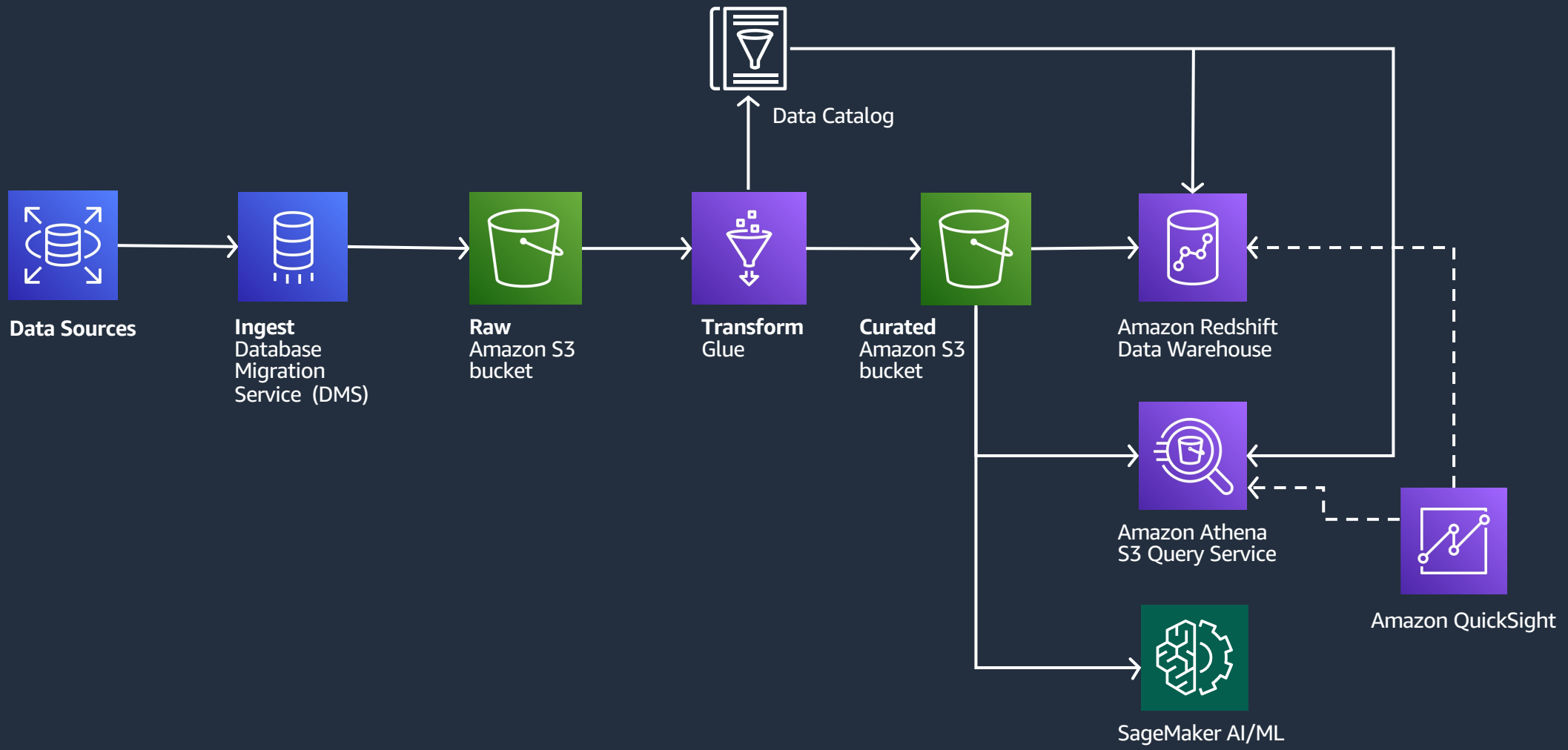
AWS Analytics Data Pipeline



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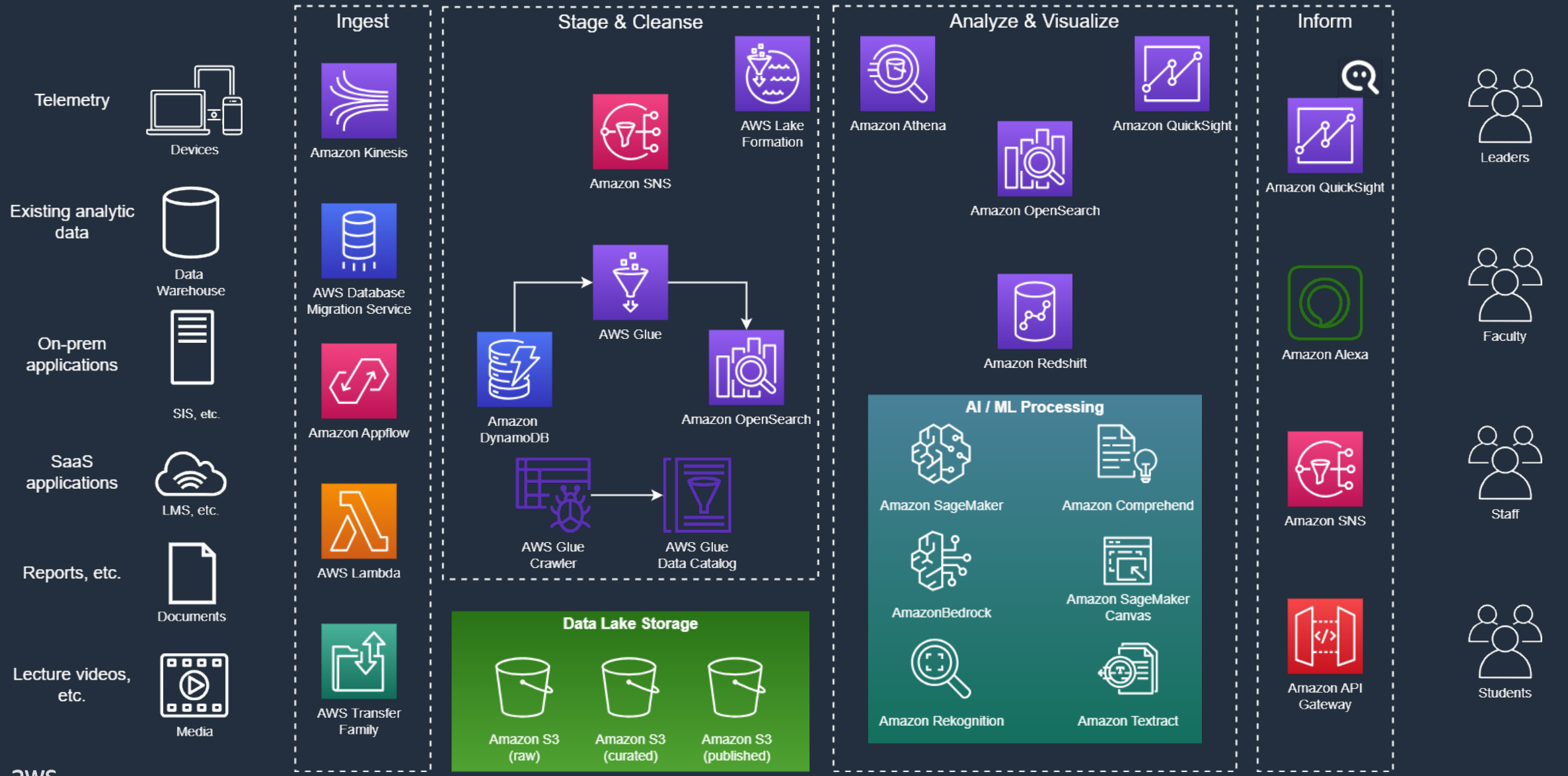
Analytics reference architecture



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Modern Data Architecture on AWS

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Calls to action:

https://aws.amazon.com/analytics

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Thank you!

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Please complete the session survey

Track: Data and analytics track

Topic: Democratizing your organization’s data analytics experience

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